

Amendments to the Claims

Application 10/645,982

Proposed Amended Independent Claim for discussion Purposes Only

1. (Currently Amended) A method for of constructing at least one computer program that solves a problem for a user, comprising the steps of:

defining a set of traits in which each trait characterizes a portion of a solution algorithm to the problem;

defining a programming interface for at least one each of the traits;

providing an at least two implementations for at least one of the defined programming interfaces;

specifying a subtrait associated with at least one of the traits or the implementations;

selecting from the set of traits a top-level trait that characterizes represents a solution to the problem;

selecting a top-level implementation for the top-level trait from the at least two implementations;

selecting an implementation from a set of provided implementations for each subtrait required for the top-level trait or the top-level implementation;

recursively selecting an implementation for each subtrait associated with at least one of the traits or the implementations in order to construct a trait hierarchy that forms a computer program for solving the problem that comprises a trait hierarchy; and

implementing an evaluation module that executes the constructed computer program in order to determine its effectiveness in solving the problem and applying an

optimization technique that carries out the method steps for constructing the computer program to generate at least one computer program that solves the problem, and that uses feedback from the evaluation module to automatically generate at least one additional computer program that better solves the problem by replacing at least one implementation with an alternate implementation.

2. (canceled)
3. (canceled)
4. (currently amended) The computer program constructing method according to claim 3, wherein an implementation is provided for each computer programming interface.
5. (original) The computer program constructing method according to claim 1, wherein the subtrait comprises a plurality of subtraits.
6. (original) The computer program constructing method according to claim 4, wherein the subtrait comprises a plurality of subtraits.
7. (original) The computer program constructing method according to claim 1, wherein the top-level trait comprises a plurality of top-level traits.
8. (original) The computer program constructing method according to claim 6, wherein the top-level trait comprises a plurality of top-level traits.
9. (canceled)
10. (original) The computer program constructing method according to claim 5, wherein the subtraits are associated with at least one of the traits, the implementation, or both.

11. (original) The computer program constructing method according to claim 1, wherein the subtrait is one of the defined set of traits.
12. (original) The computer program constructing method according to claim 6, wherein the subtraits associated with the traits, the implementation, or both.
13. (canceled)
14. (currently amended) The computer program constructing method according to claim ~~4~~ 1, wherein the optimization technique is selected from the group consisting of simulated annealing, an evolutionary algorithm, and a particle swarm optimization.
15. (currently amended) The computer program constructing method according to claim ~~4~~ 1, further comprising the steps of: allowing a user to interactively choose which trait implementations are favored or excluded at each point in each alternative computer program created by the optimization technique.
16. (original) The computer program constructing method according to claim 1, further comprising the steps of:
- defining at least one self-describing method as part of the trait implementation's interface that provides information about the trait implementation or its associated subtrait; and
 - implementing the at least one self-describing method as part of the trait implementation.
17. (original) The computer program constructing method according to claim 16, further comprising the steps of:
- using the at least one self-describing method in a user interface to provide descriptions and other detailed information about the constructed solution algorithm.

18. (original) The computer program constructing method according to claim 16, further comprising the steps of:

using the at least one self-describing method in an optimization technique to assist in the creation of alternative computer programs.

19. (original) The computer program constructing method according to claim 16, further comprising the steps of:

using the at least one self-describing method in an interactive development environment to assist a user in assembling computer programs.

20. (canceled)

21. (new) The computer program constructing method according to claim 1, wherein the problem is a financial management problem and the traits and subtraits are financial management data.